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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,535	03/06/2006	Hai Wang	4147-123	7152

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EXAMINER	
PHUNG, LUAT	
ART UNIT	PAPER NUMBER
2616	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,535	WANG, HAI	
	Examiner	Art Unit	
	LUAT PHUNG	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On page 2, line 19, it is suggested to change “AN advantage is …” to --An advantage is …--.

On page 3, lines 28-29, it is suggested to change "a Long enough period” to --a long enough period--.

On page 7, line 11, it is suggested to add a period to conclude the sentence ending in “time slot”.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 7, 9, 15, 17 and 23 are rejected under U.S.C. 103(a) as being unpatentable over Yun, et al (US 6,822,998), in view of Applicants' Admitted Prior Art (AAPA, prior art references in the instant application).

Regarding claims 1, 9 and 17, Yun discloses a method of estimating an uplink SNR of a CDMA channel (abstract; col. 1, lines 22-39), including the steps of

determining a first estimate of the signal power using the channelization code of said channel; (Fig. 4, element 420; col. 4, line 61 to col. 5, line 4)

searching for and selecting an idle channelization code that is orthogonal to the channelization code of said channel; (Fig. 5, elements 512, 514; selecting and generating a code orthogonal to channels used by mobile station per col. 5, lines 20-40)

determining a second estimate of the power of noise using said idle channelization code. (Fig. 5, elements 516, 518; calculating noise power per col. 5, lines 58-67)

Yun does not explicitly disclose an estimate of the power of interference and forming said SINR estimate using said first and second estimates. However, in addition to estimating noise power, Yun discloses generating orthogonal codes to prevent interference in the radio environment (col. 4, lines 9-60). AAPA from the same or similar fields of endeavor discloses estimating interference plus noise using pilot channelization code (Fig. 1; page 5, lines 1-11). AAPA further discloses forming SINR estimate using the first and second estimates. (page 6, lines 1-12) Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention generate a channelization code to prevent inference, as suggested by Yun, by using the code to estimate not only noise but also interference power, and forming the SINR by computing ratio of signal to interference plus noise. The motivation for doing so would have been to improve radio channel condition.

Regarding claims 7, 15 and 23, Yun discloses a method of estimating the power of uplink noise on a CDMA channel (abstract; col. 1, lines 22-39), including the steps of

searching for and selecting an idle channelization code that is orthogonal to the channelization code of said channel; (Fig. 5, elements 512, 514; selecting and generating a code orthogonal to channels used by mobile station per col. 5, lines 20-40)

determining an estimate of the power of noise using said idle channelization code. (Fig. 5, elements 516, 518; calculating noise power per col. 5, lines 58-67)

Yun does not explicitly disclose an estimate of the power of interference. However, in addition to estimating noise power, Yun discloses generating orthogonal

codes to prevent interference in the radio environment (col. 4, lines 9-60). AAPA from the same or similar fields of endeavor discloses estimating interference plus noise using pilot channelization code (Fig. 1; page 5, lines 1-11). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention generate a channelization code to prevent inference, as suggested by Yun, by using the code to estimate not only noise but also interference power. The motivation for doing so would have been to improve radio channel condition.

6. Claims 2-6, 8, 10-14, 16, 18-22 and 24 are rejected under U.S.C. 103(a) as being unpatentable over Yun, et al in view of Applicants' Admitted Prior Art, and further in view of Heinila, et al (US 7,180,932).

Regarding claim 2, the combination of Yun and AAPA does not explicitly disclose wherein said forming step includes rescaling said second estimate if the channelization code of said channel and said idle channelization code have different spreading factors. Heinila from the same or similar fields of endeavor discloses wherein said forming step includes rescaling said second estimate if the channelization code of said channel and said idle channelization code have different spreading factors. (col. 8, lines 1-23) Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to scale the noise power as suggested by Heinila in the SINR estimation of Yun and AAPA for different spreading factors. The motivation for doing so would have been to estimate the noise power to determine data rate of the system.

Regarding claim 3, the combination of Yun and AAPA does not explicitly disclose including selecting an idle channelization code having lowest possible spreading factor. Heinila from the same or similar fields of endeavor discloses including selecting an idle channelization code having lowest possible spreading factor. (col. 8, lines 1-23) (page 6, lines 1-12) Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to select the code having the lowest spreading factor by Heinila in the SINR estimation of Yun and AAPA. The motivation for doing so would have been to estimate the noise power to determine data rate of the system.

Regarding claims 4-6, AAPA further discloses:

including selecting the idle channelization code C.sub.ch,2,1 when 1 or 2 Dedicated Physical Data Channels are used on the uplink, as recited in claim 4; (from 3GPP specification per page 8, item 1; specifically, in 3GPP TS 25.213 v. 5.0, sec. 4.3.1.2)

including selecting the idle channelization code C.sub.ch,4,2 when 3 or 4 Dedicated Physical Data Channels are used on the uplink, as recited in claim 5; (from 3GPP specification per page 8, item 2; specifically, in 3GPP TS 25.213 v. 5.0, sec. 4.3.1.2)and

including selecting the idle channelization code C.sub.ch,8,1 when 5 or 6 Dedicated Physical Data Channels are used on the uplink, as recited in claim 6. (from 3GPP specification per page 9, item 3; specifically, in 3GPP TS 25.213 v. 5.0, sec. 4.3.1.2)

Regarding claim 8, the combination of Yun and AAPA does not explicitly disclose including selecting an idle channelization code having lowest possible spreading factor. Heinila from the same or similar fields of endeavor discloses including selecting an idle channelization code having lowest possible spreading factor. (col. 8, lines 1-23) (page 6, lines 1-12) Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to select the code having the lowest spreading factor by Heinila in the SINR estimation of Yun and AAPA. The motivation for doing so would have been to estimate the noise power to determine data rate of the system.

Claims 10-14 and 16 are substantial duplicates of claims 2-6 and 8, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 2-6 and 8, respectively.

Claims 18-22 and 24 are substantial duplicates of claims 2-6 and 8, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 2-6 and 8, respectively.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see form 892).

8. Examiner's Note: Examiner has cited particular paragraphs, columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and

figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and, also to verify and ascertain the metes and bounds of the Claimed invention.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luat Phung whose telephone number is 571-270-3126. The examiner can normally be reached on M-Th 7:30 AM - 5:00 PM, F 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. P./

Examiner, Art Unit 2616

/Chi H Pham/

Supervisory Patent Examiner, Art Unit 2616

6/23/08